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Determinants of Small and Micro Enterprise Registration: Results from Surveys in Niger and Swaziland

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Summary. — The relationship between governmental regulations and small and micro enterprises is the subject of increasing interest in developing countries. This paper examines the determinants of small and micro enterprise registration in Niger and Swaziland using a logit framework. Our surveys show that although virtually all firms in these countries are required to register, many do not. Several firm-specific factors are significant in explaining the probability of registering, including sector, location and size. Although Niger and Swaziland were reputed to possess differing regulatory environments, there is no evidence that the likelihood of registration depends on the country in which the firm is located. Copyright © 1996 Elsevier Science Ltd

1. INTRODUCTION

The relationship between governmental regulations and small and micro enterprises is the subject of increasing interest and concern in developing countries. Governments, for example, are grappling with ways to encourage the growth of such enterprises while, at the same time, desiring to regulate their activities and expand the tax base. Which of the many regulations influencing small and micro enterprises will help governments achieve these goals? Are there tradeoffs between these goals? This paper focuses on the decision by entrepreneurs whether to register with the government. Among the several important issues that we address are how many of these firms, in fact, are actually registered and what are prime determinants of the extent of this registration. Does the magnitude of this registration vary significantly by country, sector, location and other key variables?

This paper examines the determinants of small and microenterprise registration in two African countries, Niger and Swaziland, using a logit framework. Niger was chosen because it is reported to have a relatively onerous legal and regulatory environment, while Swaziland is reputed to have an environment much more supportive of small and micro enterprises.¹ In

both countries, detailed surveys were recently conducted of small and micro enterprises ranging in size from one to 50 workers operating in five sectors: garment, wood, and metal manufacturing along with garment and food retailing (Joumard, Liedholm and Mead, 1992).

The descriptive findings concerning registration in these two countries will be summarized in Section 2. In Section 3, the reasons governments require registration are explored. Section 4 presents a brief theoretical discussion of the determinants of registration from the perspective of the enterprise. This is followed by a review of the relevant independent variables and an elaboration of the logit regression method that will be used to analyze the data. The findings are then presented and discussed. Section 8 presents concluding remarks.

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2. SURVEY FINDINGS

One of the key survey findings is the divergence between the legal requirements of registration and the actual registration of firms. In both Niger and Swaziland, virtually all nonfarm enterprises engaged in economic activity are required to be registered with some unit of the government (see Joumard, Liedholm, and Mead, 1992 for details). Yet, the surveys revealed that sizeable numbers are not, in fact, registered. In Niger, for example, only 72% of the firms in urban areas and 8% of the firms in rural areas (villages) were registered; in Swaziland, only 58% of urban firms and 4% of the rural (village) firms were registered. Thus, substantial numbers of small and microenterprises in both countries were not registered as required by law.

Another important finding is that the extent of registration varies by several discernible characteristics of these enterprises. In addition to the locational factors mentioned previously, there is evidence that registration varies directly with the size of the firm. In Swaziland, for example, only 36% of the one-person firms were registered, while 80% of enterprises with two or more workers were registered. There were also wide differences by sector. In Swaziland, for example, the percentage of firms registered varied from 20% in wood manufacturing to over 80% in clothes retailing.

What reasons were given by the enterprises for not registering their businesses? In both Niger and Swaziland, over 50% of the nonregistered entrepreneurs claimed either that registration was not required or did not know registration was required. Less than 20% wished to obtain a license but found the procedures too complicated or too costly. Thus, it would seem that lack of information rather than high cost was the prime stated reason for the lack of registration.

Although entrepreneurs were not directly asked whether not having a license was a problem, Joumard, Liedholm, and Mead (1992) report indirect evidence that for the most part, lack of registration did not cause these firms any undue difficulties. Furthermore, the authors present evidence from a statistical analysis of the relationship between firm registration and firm growth. Controlling for other factors such as firm size and location, the sector in which it operates, and characteristics of the entrepreneur, they find that there is no significant relationship between whether a firm is registered and its growth prospects.

Was registration an onerous process, involving high transactions costs for the business? De Soto (1986), for example, has argued that these costs are very high in Peru and has reported that it takes 43 days to obtain official approval to set up a small store, and 289 days to set up a small factory there. In Ecuador, registration in the industrial sector takes between 180 and 240 days (Klein and Tokman, 1993). Markedly different results were found, however, in Swaziland and Niger. The surveys in these countries asked those

who had registered how long they had waited from the time of their application until registration was completed. Of those currently registered in Swaziland, the average waiting period was 2.2 months. For more than one-half, the waiting time was one month or less. A follow-up question asked how much time they had to spend personally in following the registration procedures. The average figure in Swaziland was 2.3 hours. In Niger, the time was even less because unlike Swaziland, the authorities actually visited the firm.

It must be recognized that registration decision is only one of many interrelated decisions. Should an enterprise comply with minimum-wage laws? Should it pay the required taxes. While we do not consider these important issues directly, it seems reasonable that a firm deciding to comply with registration requirements is more likely to comply with other regulations. Additionally, Joumard, Liedholm and Mead (1992, pp. 53–59) present evidence that the factors influencing a proprietor's decisions regarding compliance with registration requirements, tax laws, labor regulations and other laws are largely the same. Thus, concentrating on the registration decision may shed light on a continuum of related issues.

In summary, the descriptive findings from the surveys in the two countries indicated that sizeable numbers of enterprises were not registered; nevertheless, obtaining a license, for the most part, was relatively easy for those who had it, while the lack of license did not appear to be a serious constraint for most of those who did not have one.

3. WHY DO GOVERNMENTS REQUIRE REGISTRATION?²

In both Niger and Swaziland, almost all enterprises are required by the central government to register.³ From the perspective of each central government, registration is mandatory for several reasons. First, registration permits tax revenue to be collected from businesses. In Swaziland, a tax on business income applies to almost all registered enterprises.⁴ Should the enterprise in question not keep records (as is the case for most small and micro enterprises), the tax assessor is charged with estimating the income of the business. In addition, other taxes are collected for the Swazi government by the enterprise. Examples include a poll tax and a sales tax. In Niger, registered businesses pay the *patente* (business license tax) and may also pay other taxes, including taxes on rental income, commercial signs, and profits.

A second reason central governments require registration is so that certain labor regulations can more easily be enforced. Both countries have minimum wage laws, as well as regulations regarding holidays. In addition, Swaziland has laws regulating the use of child and female labor.⁵

Along the same lines, central governments may require registration so that they can better enforce certain other regulations deemed important for the common good. For example, in both Swaziland and Niger, businesses involving the processing or handling of foods and beverages are subject to a variety of health and sanitation regulations. Were registration not mandatory, the enforcement of such laws would be difficult.

Although it is the central government that purports to enforce registration, in both countries the local authorities also have a significant interest in the process. In Swaziland, any proposed small or micro enterprise on Swazi Nation Land⁶ must first meet with the approval of the local chief before the application is forwarded to the Swazi Commercial Amadota (SCA), i.e., the regional representative of the king. In addition to being able to exert control on the number and type of businesses in his locale, the chief may also be remunerated in other ways. Generally, the chief assigns at least two representatives to accompany the prospective entrepreneur to the meeting with the SCA, and all of their expenses are paid by the applicant.

In Niger, the benefits to the local governments of registering firms are more direct. Although it is employees of the national government who collect the *patente* revenue, these revenues are turned over to the local governments. Approximately one-third of the local governments' budgets come from this source.

4. THE REGISTRATION DECISION

Clearly, local and national governments in both countries are interested in registering practically all small enterprises. Our survey results also indicate that the registration process is not especially onerous. Nevertheless, as noted in the previous section, most small enterprises in both countries do not register. It is the decision by the proprietor as to whether to register to which we now turn.

What influences a proprietor's choice regarding registering her business with the authorities? As noted previously, many proprietors are unaware even that registration is required. These entrepreneurs fail to register out of ignorance, not conscious choice. The degree to which information about registration filters down to individual entrepreneurs depends both on the ability of individual proprietors to understand what information is available, and on the efforts of the government to ensure that information reaches businesspersons.

For those proprietors who have access to information regarding registration, one might hypothesize that this decision rests implicitly or explicitly on an assessment of the potential benefits of registration relative to the possible costs involved. Proprietors elect to regis-

ter their businesses when the expected benefits of doing so outweigh the expected costs.

It is useful to distinguish analytically two distinct but interrelated costs of registration — the fiscal cost and the transactions cost. Fiscal costs include any fees that might be required by the registering authorities. In Swaziland, a business license ranges from five emalangeni (\$1.79) for street vendors to 100 emalangeni (\$35.71) for larger and more capitalized enterprises. In Niger, all businesses pay a total of CFA 5,500 (\$21.23) upon registering. Transactions costs include the monetary costs involved with filing the application (e.g., costs of transport to the capital city) as well as the value of the manager's time which must be spent away from her business. As noted above, time costs to the manager are not generally substantial. No specific information is available on the monetary costs, but applicants in Swaziland are expected to pay not only their own expenses for the trip to the capital, but also for two members of the local chief's entourage.

In addition there are the less immediate recurring expenses that may ensue from registering. By registering, enterprises become known to the government, which may lead to the imposition of additional taxes or regulations at some point in the future. In Swaziland, registered businesses pay a 37.5% tax on business income. In Niger, the tax system is more complicated, with registered enterprises paying the *patente*. The amount levied varies according to the type of enterprise. Joumard, Liedholm and Mead (1992) report that the annual tax payments range from CFA 6,500 (\$25.09) for tailors to CFA 162,500 (\$627.25) for carpenters. The average *patente* payment seems to be about CFA 40,000 (\$172.74). This same study also suggests that the tax burden falls disproportionately on the smaller enterprises. This regressive tax structure may imply that smaller firms are less likely to register.

There are, of course, advantages that may accrue to enterprises that register. Typically, banks will only consider loan applications from officially sanctioned businesses. Training programs aimed at the small entrepreneur may be disinclined to accept proprietors of unregistered firms. Should the enterprise require imported inputs, it must gain access to foreign exchange. Most allocation systems favor registered businesses, and indeed may not consider applications from the unregistered. Finally, becoming registered permits an enterprise to advertise itself. As noted above, however, failing to register does not seem to constrain enterprises from expanding. This may imply that the benefits from registering are perceived to be relatively unimportant.

5. THE DATA AND KEY VARIABLES

The data for the analysis were generated by surveys in Swaziland and Niger, each enumerating 300

small enterprises. These enterprises were identified from a sample frame established by country-wide surveys conducted by Michigan State University and local institutions.⁷ The follow-up surveys restricted their attention to five previously described subsectors in both rural and urban areas. These subsectors were chosen in part because they represent a sizeable share of small and microenterprise activity in each country, but also because they were judged to represent significantly different demand patterns.⁸ The follow-up surveys were conducted in 1992.

Several key variables loom as candidates for explaining the registration decision. First, the sector in which the enterprise operates would appear to be an important explanatory variable. Certain types of activity may be more visible to the authorities, thus making the costs of not registering higher than they would be otherwise. In addition, the costs of registering, both fiscal and transactional, may be higher for some sectors relative to others. Cloth selling, food selling, wood production and metal production were included, along with the reference subsector of clothing production.

Locational aspects represent a second set of characteristics likely to influence a manager's assessment of the costs and benefits of registering. Enterprises in rural areas face higher transactions costs, since they must travel to administrative centers to complete the licensing process. At the same time, it is likely that it is more difficult (and costly) for the government to enforce its registration laws in rural areas. In addition, the potential advantages of registration, such as the ability to advertise, are probably greater for urban enterprises. Therefore it is expected that rural entrepreneurs will be less likely to register their businesses than their urban counterparts. A second locational aspect which may be important controls for whether the enterprise is home-based. Presumably, enterprises operated from the home are less visible to government regulators, and therefore the costs of not registering are lower for these firms.

Larger enterprises are usually more visible to the government. For such firms the costs of not registering may become quite high. Moreover, evidence suggests that the tax system in these countries is regressive. One would expect, then, that larger enterprises would be relatively more likely to register. In addition, the benefits of registering may be relatively greater for larger firms.⁹ A variable reflecting whether the enterprise has paid employees is used as a proxy for size.

The gender of the proprietor may also have an impact on the registration decision. Given the traditional role of women regarding childcare, the opportunity costs of taking the time to go through with the registration process may be higher for females than for males. As a result, we include in our analysis a variable controlling for proprietor gender.

As noted above, it is also necessary to keep in mind that some proprietors are largely unaware of the requirement to register, and of the potential gains from doing so. These proprietors, then, do not make calculations along cost-benefit lines. To allow for this sort of proprietor, we include variables intended to measure the proprietor's educational attainment or level of experience.

Finally, since it seems likely that the commitment to inform proprietors about the benefits of registering differs across countries, it is expected that controlling for country will be important. A related issue involves the relative diligence across countries with which governments pursue enterprises which fail to register. Clearly, a lax enforcement structure imposes fewer costs on an unregistered enterprise than would a more stringent situation. Nigerian firms, operating in a country with the tradition of heavy French regulation, are hypothesized to be more likely registered than those in Swaziland, other things being equal.

6. THE LOGIT TECHNIQUE

A natural way to study the determinants of firm registration is in a logit regression framework. In the logit model, the probability that firm i is registered, P_i , is assumed to follow the logistic cumulative distribution function:

$$P_i = \frac{1}{1 + \exp[-(a + b_1x_1 + b_2x_2 + \dots + b_nx_n)]}$$

where the x_j are regressors. When this is true, the observed¹⁰ "log-odds" ratio can be expressed as follows:

$$\ln \frac{P_i}{1 - P_i} = a + b_1x_1 + b_2x_2 + b_nx_n + \mu_i$$

where μ_i is the error term.¹¹

The parameters of the coefficients can be estimated using maximum likelihood procedures. Since we are interested, however, not in the change in the log-odds ratio but in the change in the probability of registration for a unit change in the regressors, we must look beyond the coefficients. The partial derivative of P_i with respect to X_j ,

$$\frac{\partial P_i}{\partial X_j} = \frac{\exp[-(a + b_1x_1 + \dots + b_nx_n)]}{[1 + \exp[-(a + b_1x_1 + \dots + b_nx_n)]]^2} \beta_j$$

expressed at the mean of the regressor indicates the percentage change in the likelihood of registration from a unit increase in that variable, holding all other variables constant.

7. RESULTS

The results of the logit analysis are summarized in Table 1. Most of the key explanatory variables were significant and had the hypothesized signs. The partial coefficients of the statistically significant variables indicate the percentage increase in the likelihood of registration, holding the other variables constant. Those accustomed to regression analysis will no doubt be interested in some measure of "goodness of fit" for the logit model. There is in fact an analogue to the familiar *R*-squared measure, the likelihood ratio index.¹² This measure will be reported in Table 1.

Most of the subsector variables, except for selling clothes, were significant; enterprises selling food or engaged in wood or metal production were less likely to be registered than those enterprises producing garments. All else constant, a metal firm, for example, was 41% less likely to be registered than its counterpart in clothing production.

Location variables also proved to be significant. Specifically, village enterprises were 69% less likely to be registered than their urban counterparts. There was no statistical difference, however, between firms located in secondary towns and urban areas. Enterprises run inside the home, on the other hand, were 42% less likely to be registered than those operating outside the home. Apparently, it is easier for home-based firms and rural firms to avoid registering.

Size of firm was also a statistically significant variable explaining registration. Firms with paid workers, for example, were 27% more likely to be registered than those firms with no such workers. This finding may be the result of the regressive tax structure discussed above, or it may reflect the fact that larger firms find it more difficult to elude the authorities.

Some entrepreneurial variables also were significant, specifically the gender of the entrepreneur. Female entrepreneurs were 23% less likely to be registered than the male-headed firms, other factors held constant. While the reasons for this difference are beyond the capabilities of these data, it may be that the opportunity costs of registering are higher for women, given their traditional household responsibilities.

The level of education of the entrepreneur, on the other hand, was not statistically significant. Given the percentage of entrepreneurs in Niger and Swaziland who did not register because they were unaware that it was required, this result was not expected.

Finally, one of the most surprising findings is that once all other factors were incorporated into the analysis, the country variable proved to be insignificant. Apparently, despite the reportedly more onerous legal and regulatory environment in Francophone Niger compared with Anglophone Swaziland, such factors as the subsector, location, gender of entrepreneur, and size of firm were the key determinants of firm registration, not country.

Table 1. *Determinants of registration: Logit analysis for Swaziland and Niger*

Category	Regression coefficient*	Partial derivative†
Subsector		
Selling clothes	-0.422 (-1.012)	
Selling food	-0.903 (-2.361)‡	-0.22
Wood production	-1.151 (-2.843)§	-0.28
Metal production	-1.670 (-4.186)§	-0.41
Location		
Secondary towns	0.000 (0.004)	
Villages	-2.766 (-3.577)§	-0.69
Home production	-1.733 (-6.666)§	-0.42
Size		
Paid workers	1.118 (3.888)§	+0.27
Entrepreneurial characteristics		
Female entrepreneur	-0.947 (-3.123)§	-0.23
Education of entrepreneur	0.0321 (1.464)	
Country		
Swaziland	-0.380 (-1.298)	
Likelihood ratio index	0.29	

Source: Survey Data.

**t*—Statistics in parentheses.

†Partial derivative of each independent variable with respect to registration evaluated at the mean.

‡Significant at 5% level.

§Significant at 1% level.

8. CONCLUSIONS

This paper examines the issue of small firm registration using data from surveys conducted in Niger and Swaziland. Governments, both at the local and national levels are motivated to require registration of practically all firms in order to collect revenue or enforce health, labor or other regulations. Enterprises are motivated to register since certain advantages accrue only to the registered. These advantages include the ability to obtain credit from banks, to participate in government-sponsored training program, to obtain foreign exchange, and to advertise the enterprise. In spite of these reasons, the majority of enterprises in both countries do not register. This is in part because certain managers are unaware of the require-

ments to register and the advantages of doing so. Other managers may consciously avoid registration because they feel the expected costs of doing so outweigh the likely benefits. For example, being registered does not seem to confer any advantages in terms of expansion possibilities on enterprises in our sample.

This paper presents the results of a statistical analysis of the factors that determine whether a firm will register with the authorities. There are several factors that are significant in explaining the probability of registering. First, the sector in which an enterprise operates influences the decision regarding registration, with garment producers being the most likely to register. Second, firms located in urban areas and outside the home are more likely to be registered than rural or home-based enterprises. This may be the result of a higher degree of visibility to the authorities among the former category of firms. Third, larger firms are more likely to be registered. Given that the tax structure may be regressive, and that it is more difficult for larger firms to elude the authorities, this finding is not surprising. It is also interesting that female-run enterprises are less likely to be registered even after controlling for size, location and other factors. Fourth, education of the proprietor seems to have no significant influence on the registration decision. This is somewhat surprising since one might expect better educated proprietors to be more aware of the benefits of registering and the costs involved with failing to do so.

A final result is of particular interest. Even though Niger and Swaziland were reputed to possess differing legal and regulatory environments, our analysis indicates that the probability of a firm registering does not depend on which country the firm is located in. It seems reasonable to surmise that the bureaucracy is not a binding constraint either because of widespread lack of knowledge of any benefits of registration, or because the benefits are essentially nonexistent. Divining the particular reason why country-specific effects are insignificant in explaining the probability of registering is an intriguing line of research, and one that should be pursued in the future.

This paper provides food for thought for policy makers on several issues. First, and somewhat surprisingly, while registration is required in both countries, registration does not appear to have had a deleterious effect on compliant enterprises. There is evidence that registration does not hinder an enterprise's growth prospects. Furthermore, our research suggests that proprietors do not consider the costs of registering especially burdensome.

A second policy consideration involves the problem of compliance. How can policy makers increase compliance with registration and other related laws? One possibility involves the government's role as a disseminator of information. Our research indicates that many proprietors fail to register because they are unaware that it is required. One possible intervention by a government might be to find ways to make this requirement widely known, and to make clear that registration may be beneficial. Our work also implies that these benefits are not perceived as important by proprietors. To improve the rate of compliance, the government could make efforts to make these benefits more readily available. Such efforts might include training programs of various sorts, and programs to make credit more accessible to registered firms.

A final group of possible interventions to improve compliance with registration laws involves decreasing the costs of registering or increasing the costs of failing to do so. As noted previously, these costs are not now perceived as especially high, so the scope of these policies may be limited. One possibility might involve a rewriting of the tax code to eliminate its regressive nature. This could encourage more smaller firms to comply.

Our present research does make clear, however, that some characteristics of the firm and its proprietor do influence the likelihood of registration. If policy makers are interested in exploring ways to increase the rate of compliance with the registration laws, it is important that these factors not be overlooked.

NOTES

1. For example, the complexity of Niger's taxation scheme is detailed in Barlow and Snyder (1993). For a description of Swaziland's regulations, see Joumard, Liedholm, and Mead (1992).

2. The statistics in this section are drawn from Joumard, Liedholm and Mead (1992).

3. In Swaziland, certain firms are not required to register. These include farmers who sell their own produce, and manufacturers producing on order and not operating from a particular store (e.g., upholsterers). In Niger, registration is mandatory for all enterprises.

4. Enterprises producing goods for export, and those producing goods not already being made in Swaziland may qualify for a five-year tax holiday after starting the business.

5. In Swaziland, women may not work at night, except under very specific circumstances.

6. Swazi Nation Land is effectively all rural land except that set aside for large-scale commercial agriculture.

7. These surveys were conducted in 1989 in Niger and in 1991 in Swaziland. For details see Fisseha (1990) and Fisseha and McPherson (1991).

8. See Joumard, Liedholm, and Mead (1992) for details of the follow-up surveys.

9. Larger firms, for example, are more likely to use greater amounts of imported raw materials and to borrow from formal financial institutions (see Liedholm and Mead, 1987).

10. It is assumed that the true and observed proportions are related by $p_i = P_i + e_i$, where e_i is a random disturbance.

11. μ has the following properties: $E(\mu) = 0$, $\text{Var}(\mu) =$

$1/[n_i P_i (1 - P_i)]$, where n_i is the sample size.

12. The likelihood ratio index is calculated as follows:

$$\rho^2 = 1 - \frac{\ln L(\Omega)}{\ln L(\omega)}$$

where the numerator of the expression is the value of the log-likelihood function from the logit regression, and the denominator is the value of the likelihood function when the effects of all regressors are constrained to be zero.

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